Earthquake®

MINI CULTIVATOR & DETHATCHER
OPERATORS MANUAL

MC43E
(electric start)

MC43
(manual start)

ARDISAM.com

Parts Online
GetEarthquake.com

Also includes CE models MC43ECE, MC43CE, and MC43RCE

OMMC43VE
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THANK YOU AND CONGRATULATIONS!

on your purchase of a new **EARTHQUAKE® MINI CULTIVATOR OR MINI DETHATCHER** from Ardisam, Inc. We have worked to ensure that your Earthquake Mini Cultivator or Mini Dethatcher will be one of the most trouble-free and satisfying pieces of equipment you have ever owned. With proper care, your mini cultivator or dethatcher will provide many years of service. Please take the time to read this manual carefully to learn how to correctly operate and maintain your equipment.

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FEDERAL EMISSION INFORMATION

Ardisam, Inc. warrants to the retail purchaser, that this small, off-road engine was designed, built and equipped to conform at the time of initial sale to all applicable regulations of the U.S. Environmental Protection Agency (EPA).

REGISTRATION

Record your model number and serial number in the space provided for easy reference. Fill out and mail the registration card located in your parts packet. Warranty is valid only if the completed registration card is received by Ardisam, Inc., within 30 days of purchase.

Model Number	❑ MC43E ❑ MC43 ❑ MD43
Serial Number	
Engine Serial Number	
Date of Purchase	
Place of Purchase	

INTRODUCTION

OWNER'S RESPONSIBILITY

Accurate assembly and safe and effective use of the mini cultivator or mini dethatcher is the owner's responsibility.

- Read and follow all safety instructions.
- Carefully follow all assembly instructions.
- Maintain the mini cultivator according to directions and schedule included in this Earthquake operator's manual.
- Ensure that anyone who uses the mini cultivator or mini dethatcher is familiar with all controls and safety precautions.

SPECIFICATIONS

ENGINE DISPLACEMENT	43cc
FUEL TANK CAPACITY	36 ounces
OIL/GAS RATIO	50:1 - 2.6 ounces per gallon
OIL TYPE	VIPER 2 CYCLE ENGINE OIL (p/n 300400)
GAS TYPE	UNLEADED REGULAR GAS
SPARK PLUG	BM6A
SPARK PLUG GAP	.028
TRANSMISSION	GEAR DRIVE
GEAR RATIO	32:1
TILLING WIDTH	6 inch minimum - 10 inch maximum
TILLING DEPTH	4 inch maximum
TINE SPEED	250 rpm
WHEEL SIZE	1.375 x 7.0 inch diameter
WEIGHT OF UNIT	MC43E = 42 lbs. / MC43 = 30.5 lbs. / MD43 = 57 lbs.
UNIT SIZE L x W x H (inches)	23" x 20" x 20"

GENERAL SAFETY RULES

SPECIAL MESSAGES

Your manual contains special messages to bring attention to potential safety concerns, machine damage as well as helpful operating and servicing information. Please read all the information carefully to avoid injury and machine damage.

⚠ CAUTION

AVOID INJURY! THIS SYMBOL AND TEXT HIGHLIGHT POTENTIAL HAZARDS OR DEATH TO THE OPERATOR OR BYSTANDERS THAT MAY OCCUR IF THE HAZARDS OR PROCEDURES ARE IGNORED.

IMPORTANT

AVOID DAMAGE! THIS TEXT IS USED TO TELL THE OPERATOR OF ACTIONS OR CONDITIONS THAT MIGHT RESULT IN DAMAGE TO THE MACHINE.

NOTE: General information is given throughout the manual that may help the operator in the operation or service of the machine.

IMPORTANT SAFETY PRECAUTIONS

Please read this section carefully. Operate the mini cultivator according to the safety instructions and recommendations outlined here and inserted throughout the text. Anyone who uses this mini cultivator must read the instructions and be familiar with the controls.

⚠ WARNING

CALIFORNIA PROPOSITION 65 WARNING
ENGINE EXHAUST FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

This symbol points out important safety instructions which if not followed could endanger your personal safety. Read and follow all instructions in this manual before attempting to operate this equipment.

- Do not transport the mini cultivator from one place to another with the engine running.
- The tines of the cultivator should not rotate when the engine is idling. If it does rotate when engine is idling, contact Ardisam, Inc. for instructions.
- Dress appropriately when operating the cultivator. Always wear sturdy footwear. Never wear sandals, sneakers, or open shoes, and never operate the cultivator with bare feet. Do not wear loose clothing that might get caught in moving parts. Always wear safety glasses for eye protection.
- Always keep hands, feet, hair and loose clothing away from any moving parts on engine and cultivator.
- Always wear a protective hearing device.
- Do not allow children to operate this mini cultivator. Do not allow adults to operate the mini cultivator without proper instruction.
- Do not operate any power equipment under the influence of alcohol or drugs.
- Keep all screws, nuts and bolts tight.
- Engine should be turned off and cool, spark plug wire must be removed from spark plug before any repairs or adjustments are attempted.
- Temperature of muffler and nearby areas may exceed 150° F (65° C). Avoid these areas.
- Never run engine indoors or in an enclosed area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
- Carefully inspect the area to be cultivated, and remove all foreign objects. Do not cultivate above underground utilities, including water lines, gas lines, electric cables, or pipes. Do not operate the mini cultivator in soil with large rocks and foreign objects which can damage the equipment.
- If an object becomes lodged in the tines, turn engine off, remove the wire from the spark plug and secure, allow to cool before attempting to remove the foreign object.
- Use only original equipment parts from Ardisam, Inc. including all nuts and bolts.

ENGINE SAFETY PRECAUTIONS

Warning Carbon Monoxide Poisoning

All engines contain carbon monoxide in their exhaust. Carbon monoxide is a deadly, colorless, tasteless, odorless gas which may be present even if you do not smell or see any engine exhaust. Levels of carbon monoxide, which can be deadly, can be present for days in an enclosed area that has poor ventilation. Any level of carbon monoxide, if inhaled, can cause headaches, drowsiness, nausea, dizziness, confusion and eventually death. If you experience any of these symptoms, seek fresh air and medical attention immediately.

Preventing Carbon Monoxide Poisoning

- Never run engine indoors.
- Never try to ventilate engine exhaust indoors. Carbon monoxide can reach dangerous levels very quickly.
- Never run engine outdoors where exhaust fumes may be pulled into a building.
- Never run engine outdoors in a poorly ventilated area where the exhaust fumes may be trapped and not easily taken away. (Examples include: in a large hole or areas where hills surround your working area.)
- Never run engine in an enclosed or partially enclosed area. (Examples include: buildings that are enclosed on one or more sides, under tents, car ports or basements.)
- Always run the engine with the exhaust and muffler pointed in the direction away from the operator.
- Never point the exhaust muffler towards anyone. People should always be many feet away from the operation of the engine and its attachments.

Gasoline Fires and Handling Fuel Safely

Fuel and fuel vapors are highly flammable. Never use fuel where a spark or flame may be present. Never use fuel where a potential source of ignition could occur. (Examples include: hot water or space heaters, clothes dryer, electric motors, etc.) Keep flames and sparks away from engine and fuel to prevent fires. Fuel fires spread very quickly and are highly explosive.

Prevention of Gasoline Fires

- Never fill your fuel tank with fuel indoors. (Examples include: basement, garage, barn, shed, house, porch, etc.)
- Always fill fuel tank outside in a well ventilated area.
- Never remove the fuel cap or add fuel with the engine running. Stop engine and allow to cool before filling.
- Never drain fuel from engine in an enclosed area.
- Always wipe up excess (spilled) fuel from engine before starting. Clean up spilled fuel immediately.
- Allow spilled fuel to dry, after wiping and before starting.
- Allow fuel fumes/vapors to escape from the area before starting engine.
- Test the fuel cap for proper installation before starting and using engine.
- Always run the engine with fuel cap properly installed on the engine.
- Always unscrew gas cap vent screw while engine is running.
- Never smoke while refilling engine fuel tank.
- Prevent fire and explosion caused by static electric discharge. Use only nonmetal, portable fuel containers approved by the Underwriter's Laboratory (U.L.) or the American Society for Testing & Materials (ASTM).
- Do not store engine with fuel in fuel tank indoors. Fuel and fuel vapors are highly explosive.
- During storage, screw down gas cap vent screw tightly.
- Never pour fuel from engine fuel tank.
- Never siphon fuel by mouth to drain fuel tank.
- Always have an adult fill the fuel tank.
- Never allow an adult or anyone under the influence of drugs or alcohol to fill engine.
- Never allow children to fill the engine.
- The clutch will transfer maximum power after about two hours of normal operation. During this break-in period clutch slippage may occur. The clutch should be kept free of oil or other moisture for efficient operation.

BURNS AND FIRES

The muffler, muffler guard and other parts of the engine become extremely hot during the operation of the engine. These parts remain extremely hot after the engine has stopped.

Prevention of Burns and Fires

- Never remove the muffler guard from the engine.
- Never touch the muffler guard because it is extremely hot and will cause severe burns.
- Never touch parts of the engine that become hot after operation.
- Always keep materials and debris away from muffler guard and other hot parts of the engine to avoid fires.

This engine is designed to operate using a catalytic converter which contributes to the engine's compliance with the EPA.

Steps for Working on Engine or Mini Cultivator

1. Turn off engine switch.
2. Disconnect the spark plug wire from the spark plug.
3. Securely place the disconnected spark plug wire away from the spark plug and any metal parts. This must always be done or arcing may occur between spark plug wire and metal parts.
4. Replace or repair the part on the engine or mini cultivator.
5. Check all parts that were repaired, or removed during repair, that they are secure and fit correctly.

NOTE: All repair parts must come from the factory. Never replace parts that are not specifically designed for the engine or mini cultivator.

6. Replace spark plug wire.

⚠ CAUTION

HOT GASES ARE A NORMAL BY-PRODUCT OF A FUNCTIONING CATALYTIC CONVERTER. FOLLOW ALL SAFETY INSTRUCTIONS TO PREVENT BURNS AND FIRES.

DO NOT ALTER/MODIFY ENGINE:
NEVER ALTER OR MODIFY THE ENGINE FROM THE FACTORY. SERIOUS INJURY OR DEATH MAY OCCUR IF ENGINE IS MODIFIED OR ALTERED.

WHEN WORKING ON OR REPLACING PARTS FOR THE ENGINE OR MINI CULTIVATOR YOU MUST ALWAYS DISCONNECT SPARK PLUG WIRE FROM THE SPARK PLUG AND KEEP IT AWAY FROM THE SPARK PLUG.

SAFETY DECAL

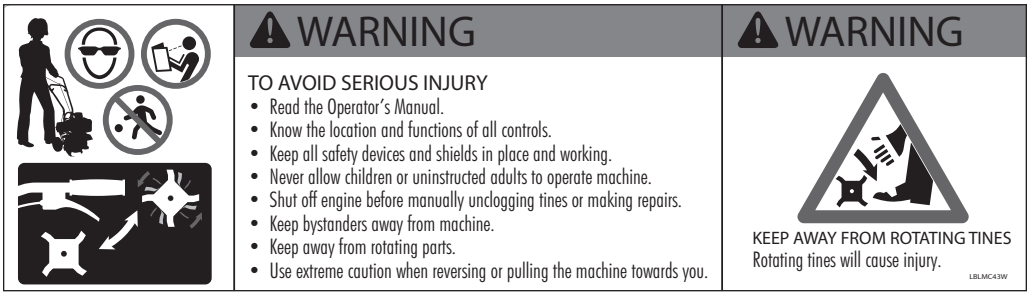
This mini cultivator has been designed and manufactured to provide you with the safety and reliability you would expect from an industry leader in outdoor power equipment manufacturing.

Reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively. We have placed a safety decal on the cultivator to remind you of some of this important information while you are operating the unit.

This important safety decal is illustrated below, and is shown here to help familiarize you with the location and content of the safety messages you will see as you perform normal cultivating operations. Please review this decal now, and if you have any questions regarding its meaning or how to comply with these instructions, reread the complete safety instruction text in this manual, or contact your local dealer.

Should this decal become unreadable because of being worn, faded, or otherwise damaged during the use of your mini cultivator, please use the part number information provided to order a replacement label from your local authorized dealer. These decals are easily applied, and will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation of your mini cultivator.

Part No. LBLMC43W
Warning Decal MC43E
Tine Shield Decal



Warning decals for European mini cultivator models

Wear ear and eye protection while using product

Keep away from moving parts

Hot surfaces. Do not tocuh.

Declared noise level

UNPACKING & ASSEMBLY

UNPACK MINI CULTIVATOR

1. Carefully lift the mini cultivator out of the box, remove any packing material and cut any ties holding the handlebar pieces to the mini cultivator assembly.

ASSEMBLY

1. Stand the mini cultivator assembly upright with tines and wheels on a level surface. Wheels should be set in the lowest position. **DO NOT** place the mini cultivator on a high surface where it can fall and cause property damage or personal injury.
2. Using two tee handle nuts (4640), two bolts (4642), and two curved washers (4641), assemble the middle handlebar (4693) to the lower handlebar (4695) that is already attached to the mini cultivator assembly. **SEE FIGURE 1.** The middle handlebar can be installed in two positions one high and one low. **DO NOT** overtighten the tee handle nuts.
3. Attach the upper right and left handlebars (4689 & 4690) to the middle handlebar using the two remaining tee handle nuts, bolts, and curved washers. **SEE FIGURE 1. DO NOT** overtighten the tee handle nuts.
4. The drag stake is shipped with point facing upwards. Before using, remove detent pin and turn the drag stake around so the point is directed in the downward position facing towards the tines. Re-insert detent pin. **SEE FIGURE 2A.**

For the Electric Start Mini Cultivator Model MC43E, remove the battery box cover and plug the white plastic connector from the battery into the mating white plastic connector in the battery box. **SEE FIGURE 2B.** Make sure the ignition key is removed from the ignition before connecting the wiring for the battery.

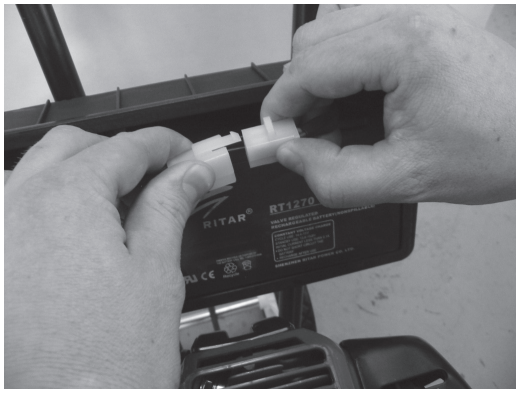


FIGURE 2B

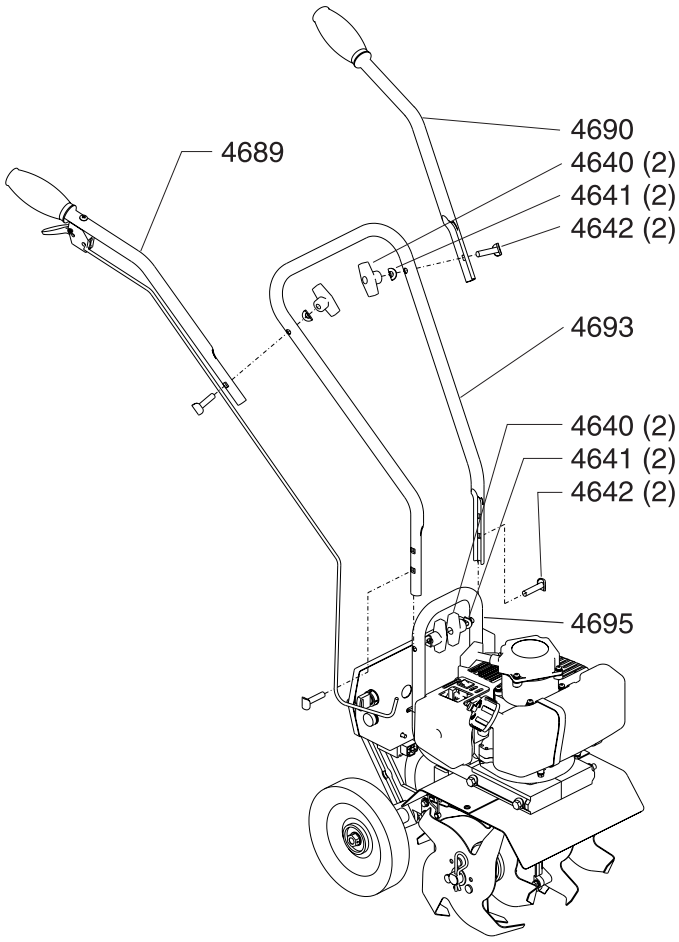


FIGURE 1
(Model MC43E shown. Figure 1 applies to both models MC43 & MC43E.)

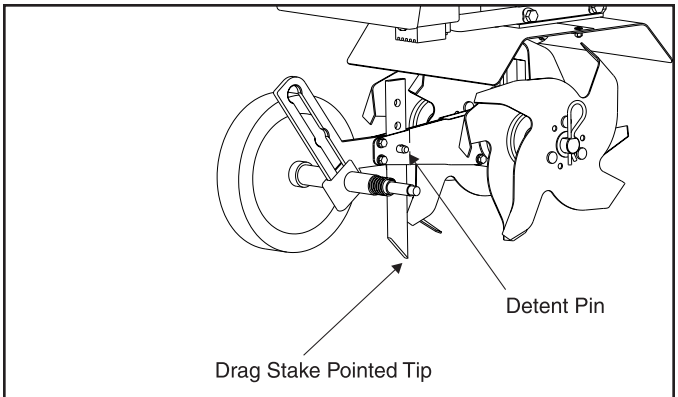


FIGURE 2A

FOR MODEL MC43E ELECTRIC START

CHARGING THE BATTERY

To charge the battery, check that the battery wiring is properly connected and plug the battery charger (4681) into the side of the battery box (4656) with matching three-prong plug. Plug the other end of the battery charger into a standard 120V outlet receptacle. Battery is fully charged when the LED light turns GREEN on the external charger. The electric start mini cultivator (MC43E) will maintain a charge in the battery when the engine is running.

Batteries may take as long as 8 hours to fully charge depending on the original charge level of the battery.

NOTE: For long term storage protection, be sure that the battery is fully charged and the white plastic battery connector is disconnected. Place the battery box cover onto the battery box and store in a dry place out of direct sunlight.

NOTE: Rechargeable batteries have a limited number of charge cycles and may eventually need to be replaced. Battery life and number of charge cycles vary by use.

⚠ WARNING

AVOID ELECTRICAL SHOCK! DO NOT USE BATTERY CHARGER AROUND WATER OR IN WET CONDITIONS.

IMPORTANT

DO NOT SPRAY WATER ON OR NEAR THE ELECTRONICS OF THE MINI CULTIVATOR AS THIS MAY RESULT IN DAMAGE TO THE ELECTRICAL COMPONENTS.

DO NOT TRY TO START ENGINE WHILE THE BATTERY CHARGER IS CONNECTED. THIS COULD DAMAGE THE ENGINE AND BATTERY.

OPERATING YOUR MINI CULTIVATOR

PREPARING ENGINE FOR STARTING

GAS AND OIL

Quality

To operate the engine, we recommend using "VIPER" brand 2-cycle oil (PN 300400) to ensure that the engine operates correctly throughout the life of the engine. Use unleaded regular gas only.

NOTE: VIPER oil can be purchased from our web site at www.GetEarthquake.com.

Mixture

Run engine with a 50:1 ratio.

GAS	OIL	RATIO
1 gallon	2.6 ounces	50:1
2 gallons	5.1 ounces	50:1
5 gallons	13 ounces	50:1

MIXING FUEL AND FILLING FUEL TANK

Mixing Fuel

1. Fuel must be mixed in a container outside in a well ventilated area.
2. Fill certified fuel container 1/4 full of recommended fuel.
3. Add recommended amount of 2 cycle oil.
4. Screw container cap on straight and tight.
5. Shake the container to mix fuel and oil.
6. Unscrew gas cap slowly to vent, add the remainder of fuel requirements.
7. Wipe away any spilled fuel or oil and allow to evaporate before moving or transporting.

Filling Fuel Tank

1. Shut-off engine and allow engine to completely cool before refilling the fuel tank.
2. Move to a well ventilated area, outdoors, away from flames and sparks.
3. Clean debris from area around the fuel cap.
4. Loosen fuel cap slowly. Place the cap on a clean, dry surface.
5. Carefully add fuel without spilling.
6. Do not fill gas tank completely full, allow space for fuel to expand.
7. Immediately replace fuel cap and tighten. Wipe off spilled fuel and allow to dry before starting engine.

⚠ CAUTION

NEVER STORE ENGINE WITH FUEL IN THE TANK INDOORS. FUEL AND FUEL VAPORS ARE HIGHLY FLAMMABLE.

NEVER MIX FUEL AND OIL DIRECTLY IN ENGINE FUEL TANK. USE ONLY NONMETAL, PORTABLE FUEL CONTAINERS APPROVED BY THE UNDERWRITER'S LABORATORY (U.L.) OR THE AMERICAN SOCIETY FOR TESTING & MATERIALS (ASTM).

AN ADULT MUST ALWAYS HANDLE AND FILL THE ENGINE WITH FUEL.

ALWAYS HANDLE GAS IN A WELL VENTILATED AREA, OUTDOORS, AWAY FROM FLAMES OR SPARKS.

DO NOT START ENGINE IF FUEL IS SPILLED. WIPE OFF EXCESS FUEL AND ALLOW TO DRY. REMOVE ENGINE FROM AREA TO AVOID SPARKS.

IMPORTANT

THIS ENGINE USES A GAS/OIL MIXTURE. DO NOT RUN ON STRAIGHT GAS ONLY, ENGINE DAMAGE WILL RESULT.

DO NOT START ENGINE WITH BATTERY CHARGER CONNECTED TO BATTERY. THIS COULD CAUSE DAMAGE TO THE MINI CULTIVATOR.

NORMAL OPERATION

1. The clutch will transfer maximum power after about two hours of normal operation. During this break-in period clutch slippage may occur. The clutch should be kept free of oil and other moisture for efficient operation.
2. Cultivate without placing excessive body weight on the unit. The mini cultivator operates most efficiently with the weight of the unit itself.
3. Never run engine indoors. Exhaust fumes are deadly.

Using the Screw Type, Manual Venting Gas Cap

Your mini cultivator is equipped with a screw type, manual venting gas cap.

1. Before starting the engine, turn the screw in the top of the gas cap 2-3 turns (counterclockwise) to its venting position. **DO NOT** turn the screw to the point that it stops (4-5 turns counterclockwise). To ensure that gas will not spill during use, check that the gas cap is screwed on tightly and the gas cap screw is in the venting position.
2. After using the mini cultivator and before putting away or transporting it in a truck bed, screw the gas cap screw and gas cap on (clockwise) tightly. This will prevent gas from leaking during storage. The gas cap will not leak during storage if gas cap is tight and the screw at the top is tight.

STARTING AND STOPPING ENGINE

- Move engine to a well ventilated area, outdoors, to prevent carbon monoxide poisoning.
- Move to an area away from flames or sparks, to avoid ignition of vapors if present.
- Remove all debris from air cleaner holes and gas cap to ensure proper air flow.

COLD ENGINE START: Starting engine for first time or after engine has cooled off or after running out of fuel.

1. Move choke lever to **RUN** position.

   NOTE: Choke must be in the RUN position when pushing or using the primer bulb.

2. Prime unit until primer hose is filled with gas.

   NOTE: When using the primer bulb, allow the bulb to return completely to its original position between pushes.

⚠ WARNING

MAKE SURE THE UNIT IS IN A STABLE POSITION BEFORE PULLING THE STARTER HANDLE.

WHEN THE UNIT STARTS TO FIRE OR RUN, RELEASE THE THROTTLE CONTROL MOMENTARILY WITH YOUR RIGHT HAND AND RETURN YOUR LEFT HAND TO THE HANDLEBAR POSITION TO MAINTAIN CONTROL AND STABILITY OF THE UNIT WITH BOTH HANDS.

⚠ CAUTION

IF ENGINE FAILS TO START AFTER TRYING STARTING PROCEDURES, PLEASE CONTACT OUR CUSTOMER SERVICE DEPARTMENT AT 800-345-6007.

STARTER ROPE CAN CAUSE AN UNANTICIPATED JERK TOWARDS ENGINE. PLEASE FOLLOW INSTRUCTIONS TO AVOID INJURY.

NEVER LEAVE ENGINE RUNNING WHILE UNATTENDED. TURN OFF AFTER EVERY USE.

NEVER CARRY MINI CULTIVATOR FROM ONE LOCATION TO ANOTHER WHILE ENGINE IS RUNNING.

ALWAYS HANDLE FUEL IN A WELL VENTILATED AREA, OUTDOORS, AWAY FROM FLAMES OR SPARKS.

ALWAYS WEAR A PROTECTIVE HEARING DEVICE.

DO NOT START ENGINE IF FUEL IS SPILLED. WIPE OFF EXCESS FUEL AND ALLOW TO DRY.

3. Move choke lever to **CHOKE** position.

   NOTE: CHOKE position is defined by moving the choke lever as far to the CHOKE position as possible.

4. Push rocker switch to the **ON** position.
5. Squeeze throttle control with right hand. Grasp starter handle with left hand and pull out slowly, until it pulls slightly harder. Without letting starter handle retract, pull rope with a rapid full arm stroke. Let it return to its original position very slowly until unit fires or runs. Repeat this step every time the starter rope is pulled.

   NOTE: If engine fails to start after 5-6 pulls, push primer 1 time and pull starter rope again.

6. After engine starts running, move choke lever to **HALF CHOKE** position until unit runs smoothly.

   NOTE: HALF CHOKE is defined when the choke lever is between CHOKE and RUN.

7. Move choke lever to **RUN** position and move throttle to desired speed.

   NOTE: Run at full throttle when possible. Do not let unit idle for extended periods of time.

8. To stop engine, push rocker switch to **OFF** position.

WARM ENGINE START:

1. Move choke lever to **CHOKE** position.

   NOTE: CHOKE position is defined by moving the choke lever as far to the CHOKE position as possible.

2. Continue with Step 4 of Cold Engine Starting.

HOT ENGINE START:

1. Continue with Step 4 of Cold Engine Starting.
2. If engine does not fire, refer to Step 1 of Warm Engine Starting.

FOR MODEL MC43E ELECTRIC START

1. Check that the battery is connected using the white plastic connectors inside the battery box. Insert ignition key into ignition and turn key to the START position until engine starts running, then release key to the ON position. **DO NOT** hold the ignition key in the START position longer than 3 seconds.
2. Run engine for 30 to 45 seconds at HALF CHOKE position until engine warms up.
3. Move choke lever to RUN position and move throttle to desired speed.
4. To stop, turn switch to OFF position on manual start models. On electric start, turn ignition key to the OFF position.

DO NOT attempt to start engine in the following ways:

- **DO NOT** use starting fluid.
- **DO NOT** spray flammable liquids or vapors into air cleaner, carburetor or spark plug chamber.
- **DO NOT** remove spark plug and attempt to start engine. Flammable fuel can spray out & ignite from a spark from spark plug.

Adjusting Wheels and Drag Stake

The wheels on the mini cultivator can be adjusted to one of three positions. The lowest wheel position is used for transporting the mini cultivator across a smooth level surface while the engine is not running. The two higher positions are used when cultivating in soil and help stabilize the unit when cultivating at different depths. **SEE FIGURE 6.**

To adjust wheels up or down, SEE FIGURES 4 AND 5.

1. Pull the locking metal sleeve against the spring until it releases from one of the three holes in the vertical guide.
2. Slide the wheel set up or down to the desired position, and release the locking metal sleeve until it locks into one of the three holes in the vertical guide.

The drag stake is used to help regulate cultivating depth and control the mini cultivator from leaping forward during operation. Resistance to forward motion is greatest when the drag stake is set in its lowest position allowing for deeper cultivation.

To adjust the drag stake, SEE FIGURE 4.

1. Pull the pin out of the drag stake mount hole.
2. Position the drag stake so the pointed tip is directed downward.
3. Insert the pin into the hole that achieves desired depth.

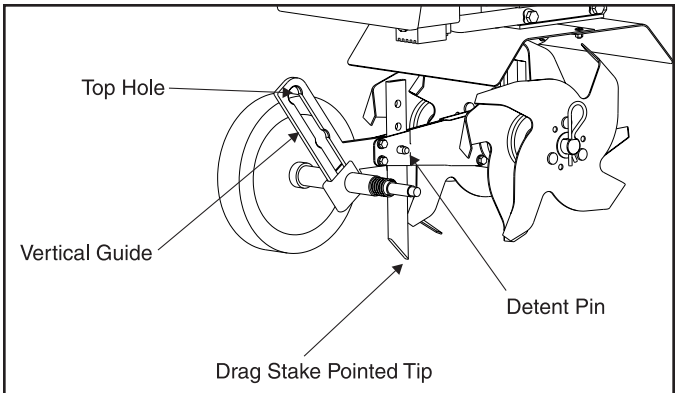


FIGURE 4

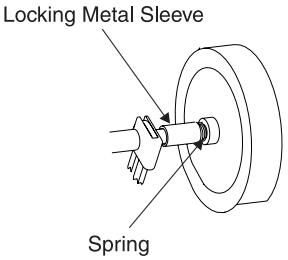


FIGURE 5

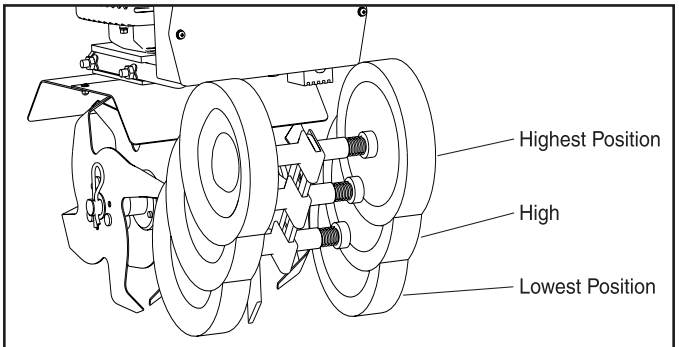


FIGURE 6

MAINTENANCE

STEPS FOR WORKING ON EQUIPMENT

1. Turn off engine switch.
2. Disconnect the spark plug wire from the spark plug.
3. Securely place the disconnected spark plug wire away from the spark plug and any metal parts. This must always be done or arcing may occur between spark plug wire and metal parts.
4. Replace or repair the part on the mini cultivator.
5. Check all parts that were repaired, or removed during repair, that they are secure and fit correctly.

   NOTE: All repair parts must come from the factory. Never replace parts that are not specifically designed for the mini cultivator.
6. Reconnect the spark plug wire.

MINI CULTIVATOR MAINTENANCE

1. The transmission case has grease installed at the factory. It is recommended that once a year the gear case be split by a qualified service professional and the grease level checked. Add a molylithium type grease only if level of grease is below top of the gears. **DO NOT OVERFILL.**
2. Keep all screws, nuts, and bolts tight.
3. For cold weather operation, store the unit in a cool environment. Transferring the unit from a cold to a warm place can cause the build up of harmful condensation.

ENGINE MAINTENANCE

Please read the maintenance schedule and observe these recommendations to extend the life of your engine.

Good maintenance is essential for safe, economical, and trouble-free operation. It will also help reduce air pollution. To help you properly care for your engine, the following pages include a maintenance schedule, routine inspection procedures, and simple maintenance procedures using basic hand tools. Other service tasks that are more difficult, or require special tools, are best handled by professionals and are normally performed by a technician or other qualified mechanic.

Maintenance, replacement or repair of the emissions control devices and systems may be performed by any non-road engine repair establishment or individuals. However, items must be serviced by an authorized dealer to obtain "no charge" emissions control service.

The maintenance schedule applies to normal operating conditions. If you operate your engine under unusual conditions, such as sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, consult your servicing dealer for recommendations applicable to your individual needs and use.

⚠ CAUTION

PRACTICE SAFETY AT ALL TIMES. ENGINE MUST BE TURNED OFF AND ALLOWED TO COOL, AND SPARK PLUG WIRE MUST BE DISCONNECTED BEFORE ATTEMPTING ANY MAINTENANCE OR REPAIR.

TO PREVENT ACCIDENTAL STARTING:
ENGINE MUST BE TURNED OFF AND COOL, AND SPARK PLUG WIRE MUST BE REMOVED FROM SPARK PLUG BEFORE CHECKING AND ADJUSTING ENGINE OR EQUIPMENT.

TEMPERATURE OF MUFFLER AND NEARBY AREAS MAY EXCEED 150° F (65° C). AVOID THESE AREAS.

CHECK MINI CULTIVATOR OFTEN FOR LOOSE NUTS AND BOLTS. KEEP THESE ITEMS TIGHTENED.

NEVER STORE ENGINE WITH FUEL IN THE TANK INSIDE A BUILDING. POTENTIAL SPARKS MAY BE PRESENT FOR IGNITION OF FUEL AND FUEL VAPORS.

AN ADULT MUST ALWAYS DO MAINTENANCE AND REPAIR ON ENGINE AND MINI CULTIVATOR.

ENGINE MUST BE SHUT-OFF, COOL, AND SPARK PLUG WIRE REMOVED BEFORE ANY REPAIR OR MAINTENANCE CAN BE DONE.

MAINTENANCE SCHEDULE

MAINTENANCE ITEM		Every 8 hours (daily)	Every 20 hours or seasonally	Each Year
Clean Engine and Check Bolts & Nut		X		
Air Filter	Check	X		
(See Air Filter section)	Clean *		X	
	Replace		X	X
Spark Plug (Gap .028")	Check/ Adjust		X	
(See Spark Plug section)	Replace			X

* Service more frequently under dusty conditions

Cooling Fins

Cooling fins, air inlets and linkages must be free from any debris before each use.

Air Filter

Never run engine without air cleaner properly installed. Added wear and engine failure may occur if air cleaner is not installed on engine.

Service air cleaner every 3 months or after 20 hours of operation. **Clean filter daily in extremely dusty conditions.**

IMPORTANT

NEVER TWIST AIR FILTERS WHEN CLEANING. ALWAYS PRESS.

Steps for Cleaning Air Filter (Ring Style Foam Filter) - See parts explosion on page 26.

1. Wash in warm water with liquid detergent and water until dirt and debris are removed. Press filter when washing, do not twist.
2. Rinse in warm water until soap and dirt are removed.
3. Dry filter by wrapping in a clean cloth and pressing filter until it is dry.
4. Apply a lightweight motor oil or thin based machine oil to the entire filter.
5. Remove excess oil.
6. Attach the filter and air cleaner cover to the engine.

Steps for Cleaning Air Filter (Block Style Foam Filter) - See parts explosion on page 26.

1. Before removing the air filter cover, move the choke lever to the choke position. **(Figure 1)**
2. To remove air filter cover, squeeze the latch tabs on both sides of the cover. **(Figure 2)**
3. Once the latch tabs are released, remove the air filter cover by rotating the cover away from the engine. **(Figure 3)**
4. Remove the foam filter element **(Figure 4)** and replace with a new oiled filter, or clean the original foam filter with warm water and mild soap by following the previous steps for Cleaning Air Filter. Remember to thoroughly oil the foam filter with 30 or 40 weight motor oil and squeeze out any excess oil.
5. Reinstall the foam filter, pressing it evenly in place to ensure that the foam is fully seated into its sealed position. **(Figure 5)**
6. Replace the air filter cover so that it fully snaps into place and is secured by the latch tabs. Check that the cover is securely attached by pulling slightly on the cover. If the cover doesn't move when pulled, it is secure.

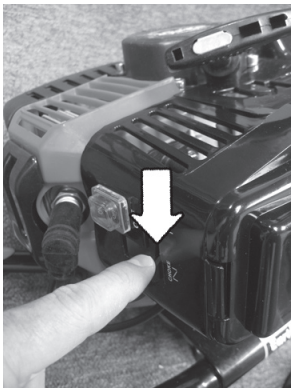


Figure 1

Figure 2

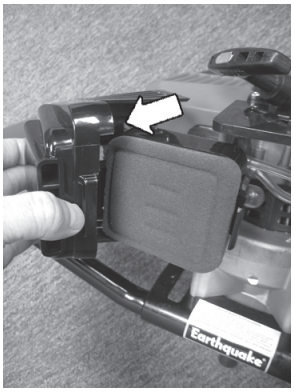


Figure 3

Figure 4

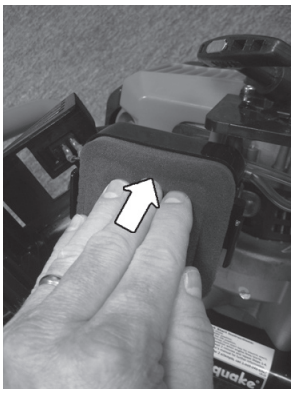


Figure 5

Spark Plug

The recommended spark plug is a NGK BM6A which cross references to a Champion CJ8.

1. Check spark plug at the beginning of each season.
2. Disconnect the spark plug cap, and clean any debris from around the spark plug area.
3. Remove spark plug and replace if any of the following occur; pitted electrodes, burned electrodes, cracked porcelain, or deposits around electrodes.
4. After analysis, seat spark plug and tighten with spark plug wrench. Reconnect the spark plug wire.

- Reinstall original spark plug, tighten additional 1/2 turn.
- Installing new spark plug, adjust spark plug gap to .028" and tighten additional 1/8 – 1/4 turn .

NOTE: Loose spark plug may overheat and damage engine. Over tightened spark plug may damage threads in the cylinder head.

Carburetor

Never tamper with factory setting of the carburetor.

TINE REMOVAL AND INSTALLATION

To Remove Tines

1. Remove the cotter pins from each end of the tine shaft.
2. Slide the four tines off the shaft.

To Install Tines

1. First slide the inside tines onto each end of the tine shaft. One inside tine is stamped with a "B" and the other is stamped with a "C".
2. Slide the outside tine "A" and tine "D" onto each end of the shaft next. The tines should be installed in the correct order so that they are positioned left to right A, B, C, D, as viewed from the user's position on the mini cultivator. Make sure that the hub collars on both the right and left pairs of tines face each other so that there is adequate spacing between the tine blades. **SEE FIGURE 3.**
3. Insert the cotter pins into the holes at each end of the tine shaft to lock the tines into place.

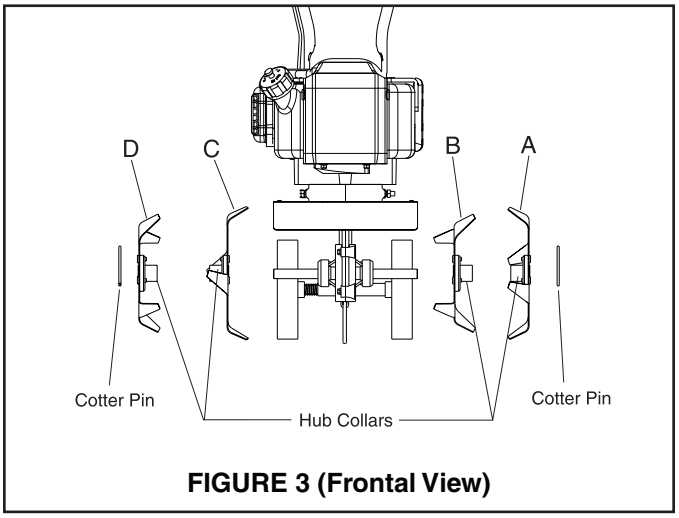


FIGURE 3 (Frontal View)

TRANSPORTING YOUR MINI CULTIVATOR

1. After using the mini cultivator and before transporting it in a truck bed, screw the gas cap screw and gas cap on (clockwise) tightly. The gas cap will not leak during transporting if gas cap is tight and the screw at the top is tight. Never transport engine inside an enclosed space within a vehicle. Fuel or fuel vapors may ignite causing serious injury or death.
2. If fuel is present in the fuel tank, transport in an open vehicle in an upright position.
3. If an enclosed vehicle must be used, remove gas into an approved red fuel container. **DO NOT siphon by mouth.**
4. Run engine to use up the fuel in the carburetor and fuel tank. Always run engine in a well ventilated area.
5. Wipe away any spilled fuel from engine and mini cultivator. Allow to dry.
6. Gas cap and gas cap vent screw should be turned down tightly before transporting mini cultivator in a vehicle.

LONG TERM STORAGE

If your mini cultivator will not be used for more than one month, prepare it for long term storage.

Steps for Long Term Storage

1. Remove the remainder of the fuel from the gas tank into an approved fuel container.
2. Store mini cultivator engine in a vertical position.
3. Remove all debris from cultivator tines and engine.

SERVICE INFORMATION

At Ardisam, we build quality and durability into the design of our products; but no amount of careful design by us, and careful maintenance by you, can guarantee a repair-free life for your machine. Most repairs will be minor, and easily fixed by following the suggestions in the troubleshooting guide in this section.

The guide will help you pinpoint the causes of common problems and identify remedies.

For more complicated repairs, contact your place of purchase or Ardisam, Inc. for an authorized service center in your area. Ardisam will make the necessary repairs if a service center is not available. A parts catalog is included in this section.

We will always be glad to answer any questions you have, or help you find suitable assistance. To order parts or inquire about warranty, call, write or e-mail us at the address found below, under the section ordering repair parts.

⚠ CAUTION

TO AVOID INJURY OR DEATH, NEVER SIPHON FUEL BY MOUTH.

NEVER STORE MINI CULTIVATOR WITH FUEL IN THE FUEL TANK INSIDE AN ENCLOSED AREA OR BUILDING.

PRACTICE SAFETY AT ALL TIMES. ENGINE MUST BE TURNED OFF AND ALLOWED TO COOL, AND SPARK PLUG WIRE MUST BE DISCONNECTED BEFORE ATTEMPTING ANY MAINTENANCE OR REPAIR.

ORDERING REPAIR PARTS

Parts can be obtained from the store where your mini cultivator was purchased, direct from the manufacturer or online. To order from the manufacturer, call, write or email:

Ardisam, Inc.
1160 Eighth Avenue, Cumberland, Wisconsin 54829
1-800-345-6007 • 1-715-822-2415
E-mail: info@ardisam.com

Please include the following information with your order:

1. Part numbers
2. Part description
3. Quantity
4. Model number and serial number

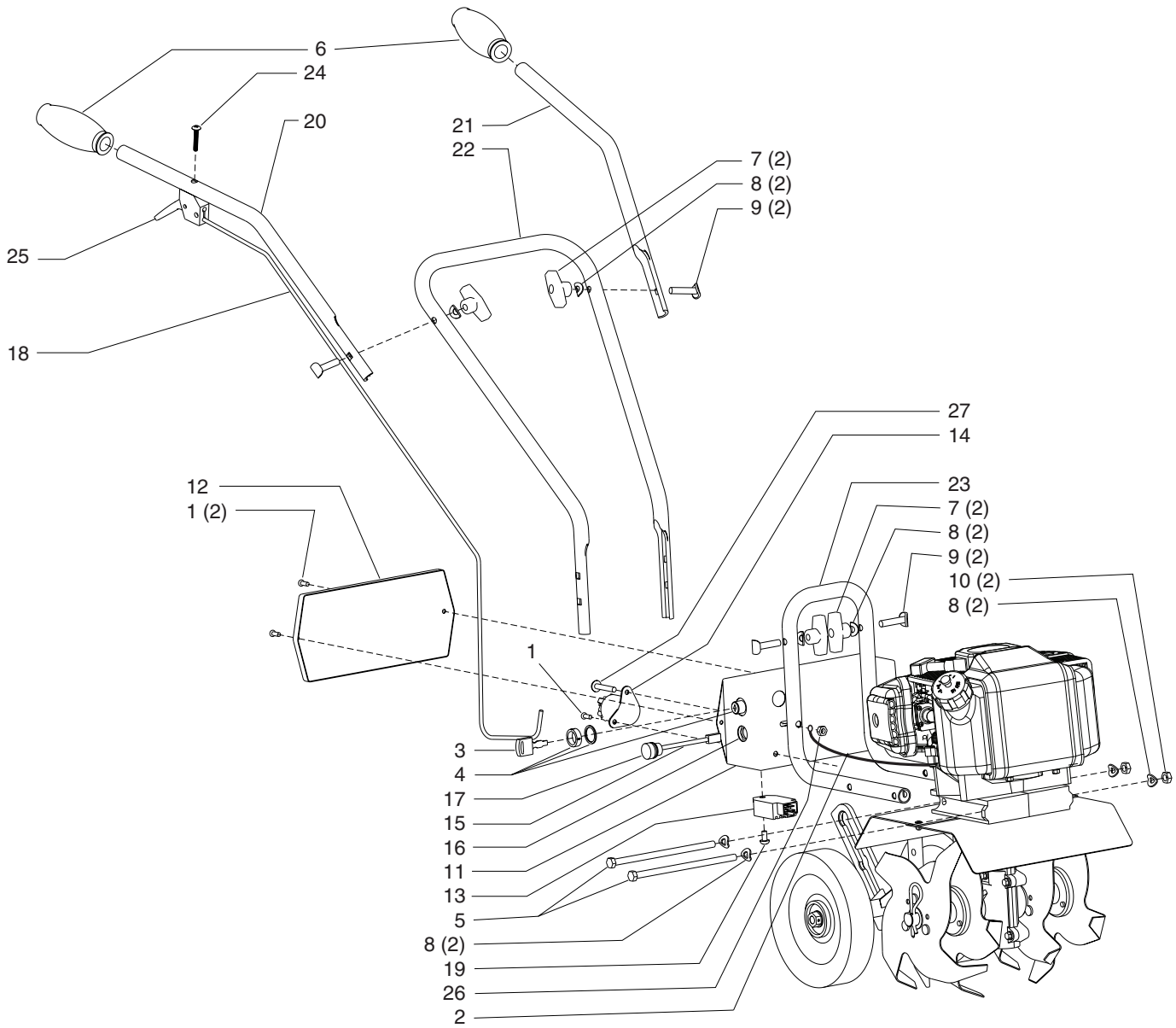
NOTE: When ordering from the manufacturer, there is a $10.00 minimum order.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY/ACTION
Engine will not start	1. Power switch off	1. Flip switch to ON position
	2. Spark plug wire disconnected	2. Connect spark plug wire to spark plug
	3. Out of fuel	3. Refuel
	4. Spark plug wet, faulty or improperly gapped	4. Clean, replace or gap spark plug
	5. Throttle control not held open	5. Hold throttle control open when pulling recoil handle
	6. Fuel line hose not positioned in bottom of gas tank	6. Push fuel line down into fuel in gas tank
Engine runs rough, floods during operation	1. Dirty air filter	1. Clean or replace air filter
	2. Choke partially engaged	2. Turn off choke
	3. Carburetor out of adjustment	3. Call factory
Engine is hard to start	1. Stale fuel	1. Drain old fuel and replace with fresh. Use gas stabilizer at end of season
	2. Spark plug wire loose	2. Make sure spark wire is securely attached to spark plug
	3. Dirty carburetor	3. Clean carburetor, use gas stabilizer, new gas can
	4. Throttle control not held open	4. Prime unit 3 more times, then hold throttle open when pulling recoil handle
Engine misses or lacks power	1. Clogged gas tank	1. Remove and clean gas tank
	2. Clogged air filter	2. Clean or replace air filter
	3. Carburetor out of adjustment or bad	3. Call factory
	4. Spark plug wet, faulty or improperly gapped	4. Clean, replace or gap spark plug
Engine runs, then quits	1. Gas cap not venting	1. Clean or replace gas cap, check vent
	2. Plugged fuel filter	2. Clean or replace fuel filter
	3. Carburetor out of adjustment or bad	3. Call factory
Engine revs too high	1. Carburetor out of adjustment	1. Call factory
Tines turn at idle	1. Idle speed too high	1. Adjust idle speed lower
	2. Broken clutch spring	2. Replace spring
MODEL MC43E ONLY		
Charger won't charge	1. Battery worn out	1. Replace with new batttery
	2. Connectors not plugged in	2. Open battery box and connect battery connectors
Key won't start machine	2. Battery not charged	1. Charge battery

Contact service provider at 800-345-6007 if above remedies fail.

MC43E HANDLEBAR PARTS



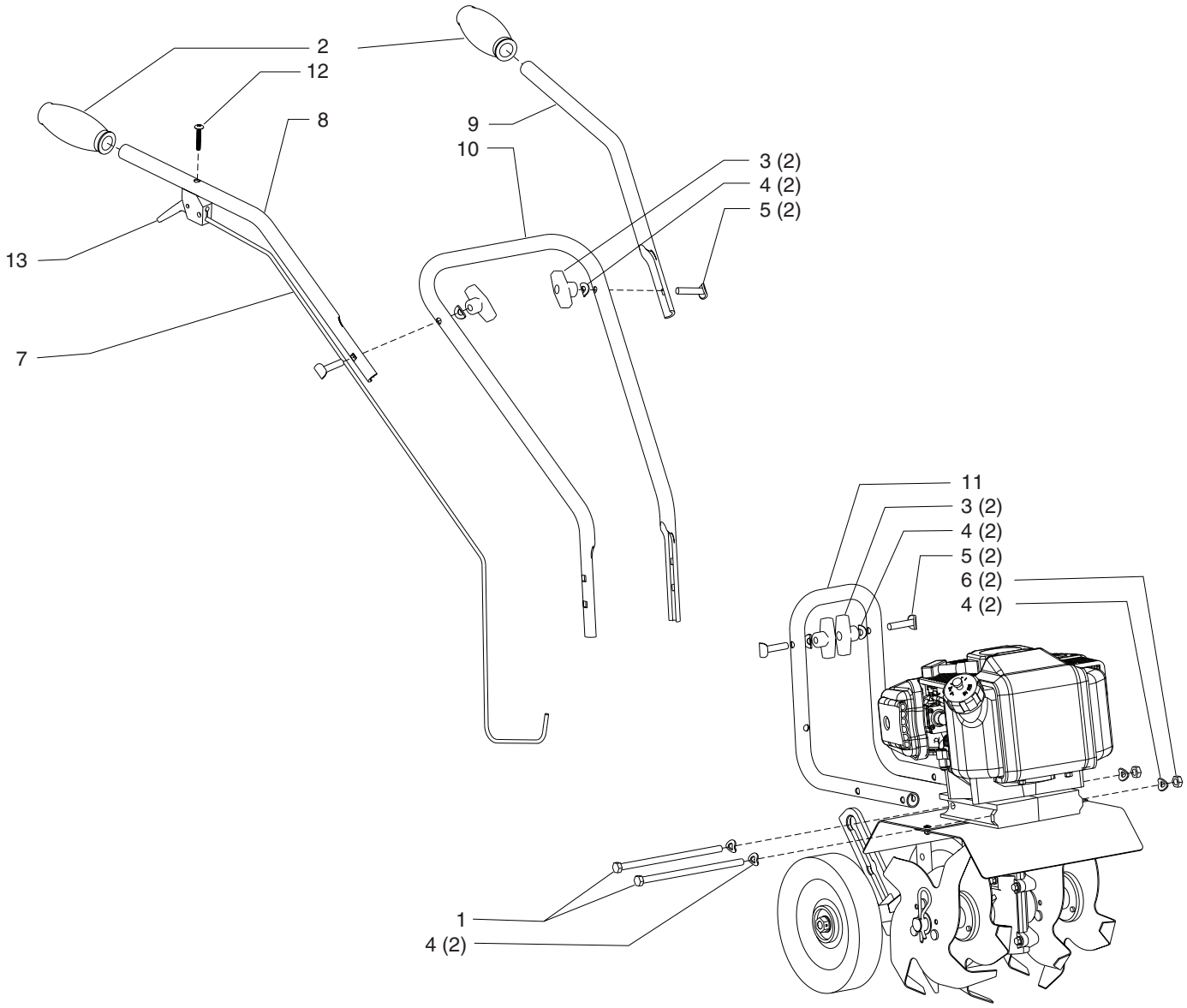
Parts Online
GetEarthquake.com

MC43E HANDLEBAR PARTS LIST

KEY	PART #	DESCRIPTION	QTY.
1	300471	BOLT, M5 X 12MM	3
2	300523	GROUND WIRE	1
3	46139	KEY ONLY	1
4	46140	KEY SWITCH	1
5	46141	BOLT, HEX HD M8 X 1.25 X 160MM	2
6	4639	GRIP, HANDLEBAR	2
7	4640	NUT, T-HANDLE	4
8	4641	WASHER	8
9	4642	BOLT, HANDLE CLAMP	4
10	4655	NUT, HEX HD M8 X 1.25	2
11	4656	BATTERY BOX MC43E	1
12	4657	COVER, BATTERY BOX	1
13	4659	VOLTAGE RECTIFIER	1
14	4660	SOLENOID	1
15	4661	CHARGER PIGTAIL	1
16	4662	NUT, CHARGER PIGTAIL	1
17	4663	CAP, CHARGER PIGTAIL	1

KEY	PART #	DESCRIPTION	QTY.
18	4667	THROTTLE CABLE	1
19	4669	BOLT, M6 X 1MM X 12MM PAN HD	1
20	4689	HANDLEBAR, UPPER RIGHT	1
21	4690	HANDLEBAR, UPPER LEFT	1
22	4693	HANDLEBAR, MIDDLE	1
23	4695	HANDLEBAR, LOWER	1
24	4814	BOLT, PHILLIPS TRUSS HD ZN 10-24 X 1-1/4	1
25	4819	TRIGGER ASSEMBLY, LONG THROW W/O CABLE	1
26	53106	NUT, LOCK BI-WAY 1/4-20	2
27	6041612	BOLT, PTH ZN 1/4-20 X 1-1/2	2
--	46122	BATTERY 12V 7A (not shown)	1
--	4653	FUSE HOLDER (not shown)	1
--	4658	FUSE 10 AMP (not shown)	1
--	4675	BATTERY CONNECTOR SET, WHITE (not shown)	1
--	4681	BATTERY CHARGER (not shown)	1

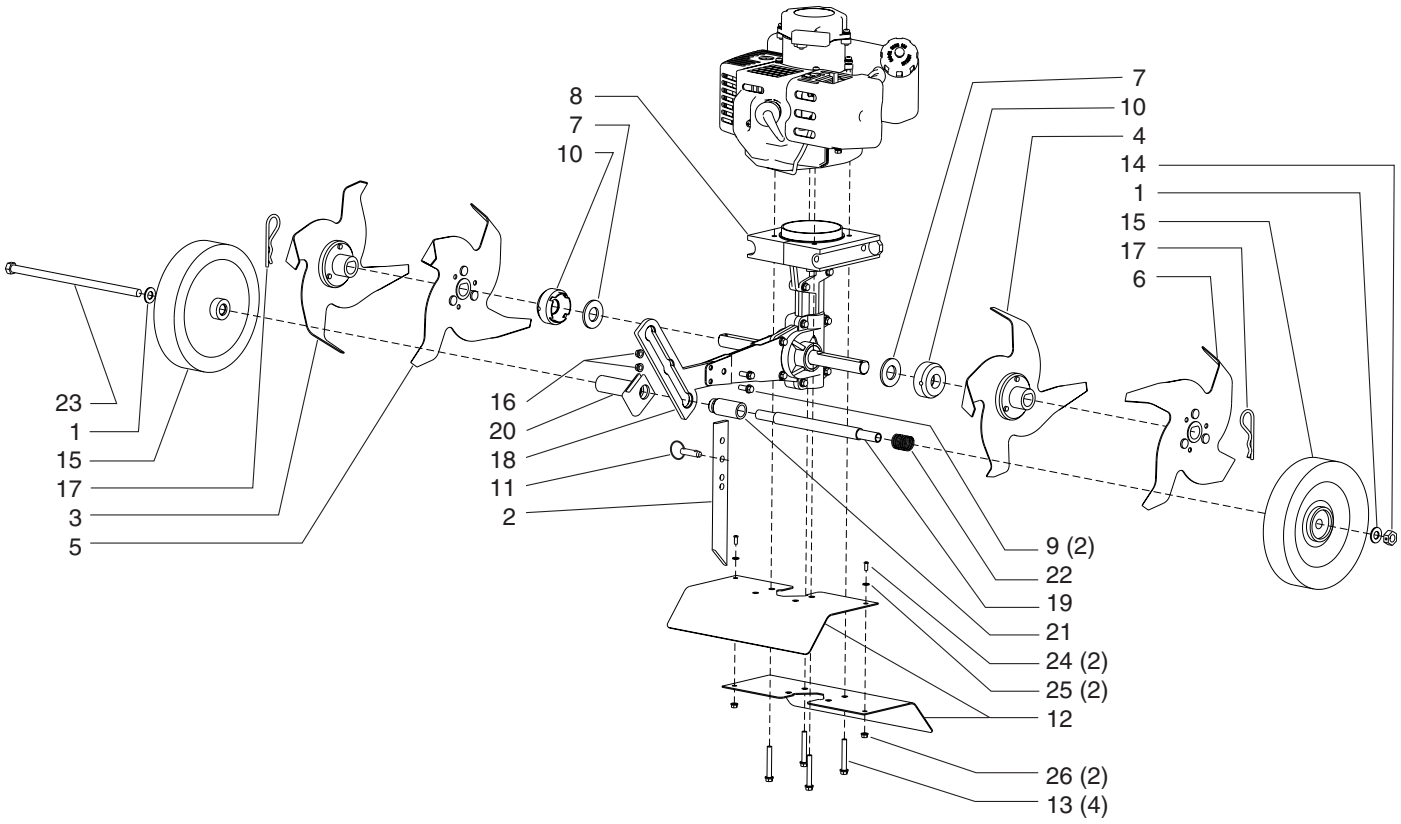
MC43 HANDLEBAR PARTS



MC43 HANDLEBAR PARTS LIST

KEY	PART #	DESCRIPTION	QTY.
1	46141	BOLT, HEX HD M8 X 1.25 X 160MM	2
2	4639	GRIP, HANDLEBAR	2
3	4640	NUT, T-HANDLE	4
4	4641	WASHER	8
5	4642	BOLT, HANDLE CLAMP	4
6	4655	NUT, HEX HD M8 X 1.25	2
7	4667	THROTTLE CABLE	1
8	4689	HANDLEBAR, UPPER RIGHT	1
9	4690	HANDLEBAR, UPPER LEFT	1
10	4693	HANDLEBAR, MIDDLE	1
11	4695	HANDLEBAR, LOWER	1
12	4814	BOLT, PHILLIPS TRUSS HD ZN 10-24 X 1-1/4	1
13	4819	TRIGGER ASSEMBLY, LONG THROW W/O CABLE	1

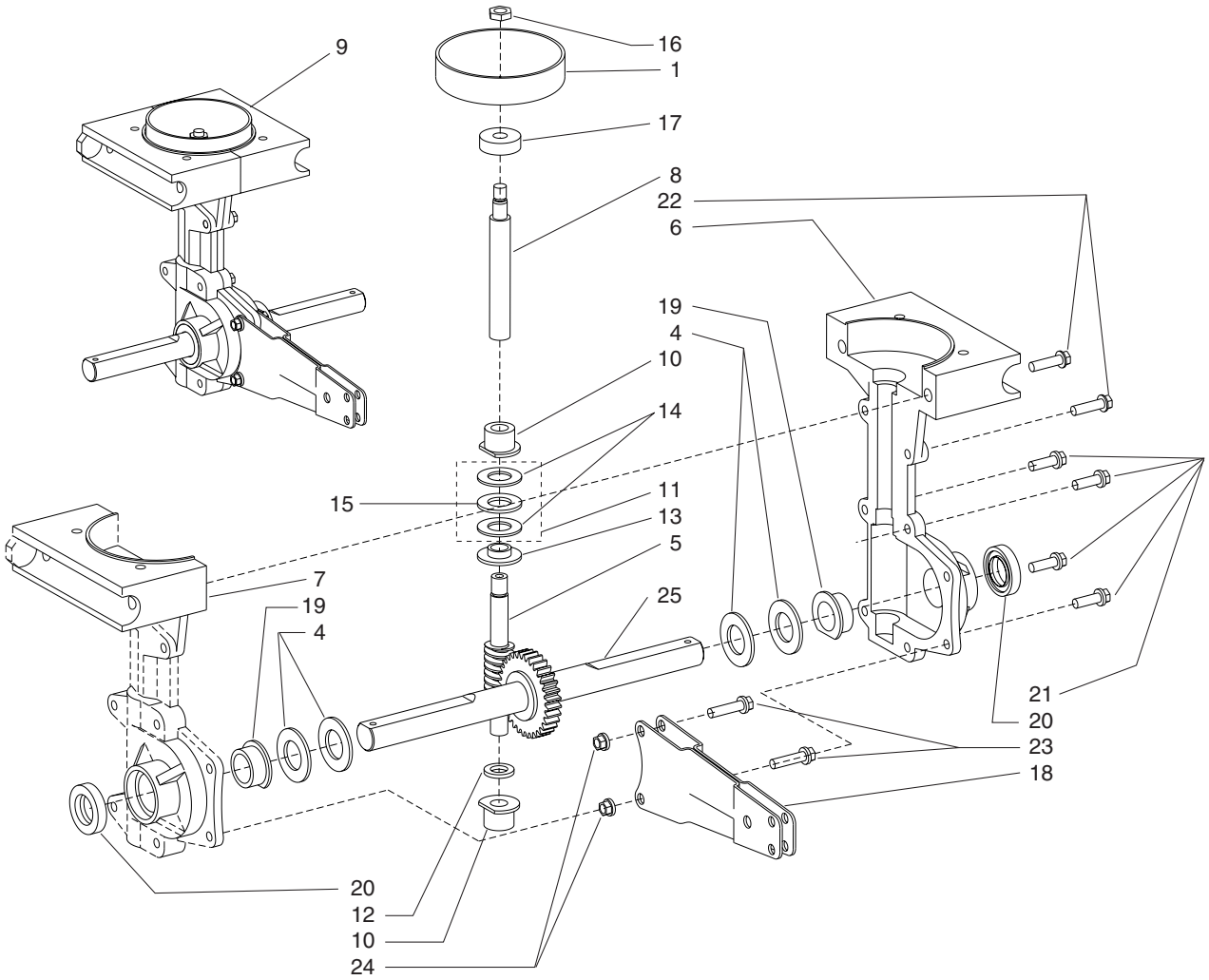
HOOD & TINES PARTS



KEY	PART #	DESCRIPTION	QTY.
1	2431	WASHER, 10MM NARROW FLAT	2
2	4600	DRAG BAR	1
3	4601	TINE “A” RIGHT OUTSIDE	1
4	4602	TINE “C” LEFT INSIDE	1
5	4603	TINE “B” RIGHT INSIDE	1
6	4604	TINE “D” LEFT OUTSIDE	1
7	4606	WASHER, FIBER	2
8	46138	TRANSMISSION ASSEMBLY	1
9	46142	BOLT M6 X 1.0 X 15MM FLANGED HEX HD	2
10	46144	DUST CAP	2
11	46145	DETENT PIN 5/16 X 1-1/2”	1
12	46146	TINE SHIELD	2
13	4625	BOLT, M6 X 1.0 X 42MM FLANGED HEX HD	4
14	4629	NUT M10 X 1.5 CENTER LOCK HEX HD	1

KEY	PART #	DESCRIPTION	QTY.
15	4634	WHEEL	2
16	4650	NUT M6 X 1.0 FLANGED HEX HD	2
17	4652	HAIR PIN, 5/8-3/4 COTTER	2
18	4673	WHEEL HOLDER	1
19	4674	WHEEL TUBE	1
20	4678	GUIDE, WHEEL TUBE	1
21	4684	TUBE, WHEEL LOCK	1
22	4685	SPRING, WHEEL LOCK	1
23	4687	BOLT M10 X 1.5 X 225MM HEX HD	1
24	4691	BOLT, M4 X 0.7 X 10MM PHILLIPS PAN HD	2
25	4692	WASHER, M4 FLAT	2
26	4694	NUT M4 X 0.7 FLANGED HEX HD	2
--	E43CCV	ENGINE 43CC CAT CONVERT	1
--	E43CCE	ENGINE 43CC CAT CONVERT ELEC START	1

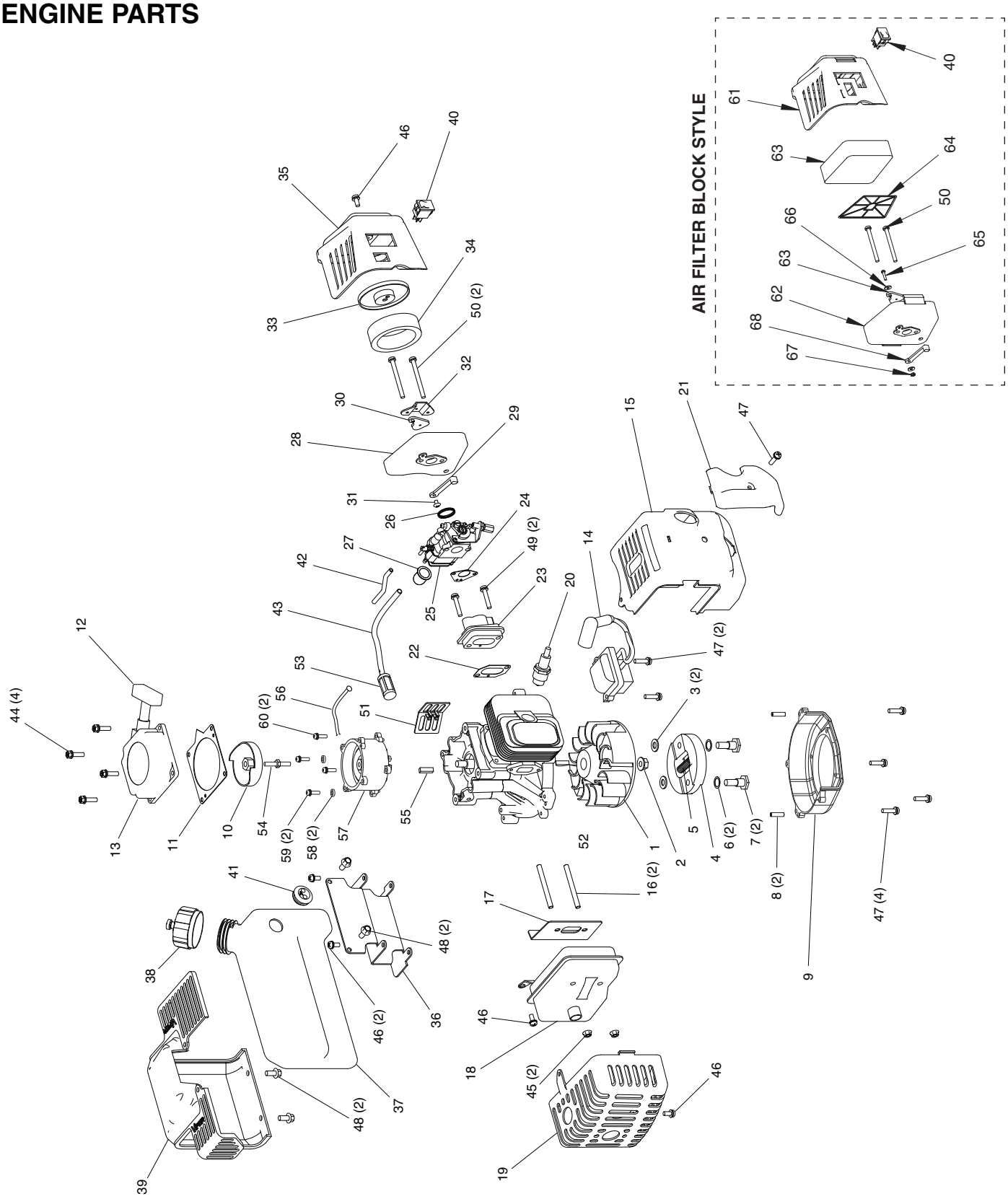
TRANSMISSION PARTS



KEY	PART #	DESCRIPTION	QTY.
1	300414	CLUTCH DRUM	1
	4608	TINE SHAFT (USE P/N 4651)	
	4609	GEAR, TINE SHAFT (USE P/N4651)	
4	4610	SHIM, TINE SHAFT	4
5	4613	WORM SPUD	1
6	46135	TRANSMISSION CASTING, RIGHT	1
7	46136	TRANSMISSION CASTING, LEFT	1
8	46137	DRIVE SHAFT	1
9	46138	TRANSMISSION ASSEMBLY	1
10	4614	BUSHING, DRIVE SHAFT	2
11	4615	THRUST BEARING ASSEMBLY	1
12	4616	SPACER, BUSHING	1
13	4617	REDUCER, THRUST BEARING	1

KEY	PART #	DESCRIPTION	QTY.
14	4618	WASHER, THRUST	2
15	4619	THRUST BEARING CAGE WASHER	1
16	4620	NUT, JAM M8	1
17	4623	BALL BEARING, 9MM	1
18	4633	ARM WHEEL/DRAG STAKE MOUNT	1
19	4645	BUSHING, TINE SHAFT	2
20	4646	SEAL, TINE SHAFT	2
21	4647	BOLT, FLG HEX HD M6 X 1.0 X 18MM	4
22	4648	BOLT, FLG HEX HD M6 X 1.0 X 22MM	2
23	4649	BOLT, FLG HEX HD M6 X 1.0 X 24MM	2
24	4650	NUT, FLANGED HEX HD M6	2
25	4651	TINE GEAR & SHAFT ASSEMBLY	1

ENGINE PARTS



ENGINE PARTS LIST

KEY	PART #	DESCRIPTION	QTY.
1	300484	FLYWHEEL, MAGNETO	1
2	300337	NUT, FLANGE M8	1
3	300462	WASHER, ROTOR	2
4	300413	CLUTCH ROTOR ASSEMBLY	1
5	300412	SPRING, CLUTCH	1
6	300449	WASHER, SPRING	2
7	300450	BOLT, SHOULDER	2
8	300467	PIN, LOCATING	2
9	300487	MOUNT RING & SHROUD	1
10	300491	RECOIL CLUTCH	1
11	300429	PLATE, RECOIL	1
12	3004121	HANDLE, STANDARD RECOIL	1
13	300430	RECOIL ASSEMBLY W/STANDARD HANDLE	1
14	300472	IGNITION COIL, MC43	1
	300472CE	IGNITION COIL, MC43 CE	1
	300191	IGNITION COIL, MC43E	1
	300191CE	IGNITION COIL, MC43E CE	1
15	300482	SHROUD, ENGINE	1
16	300493	BOLT, STUD M6 X 62MM	2
17	300475	GASKET, MUFFLER	1
18	4813	MUFFLER	1
19	4812	COVER, MUFFLER	1
20	BM6A	SPARK PLUG	1
21	300483	COVER, ENGINE SHROUD	1
22	300476	GASKET, INTAKE	1
23	300478	WINDPIPE, INTAKE	1
24	300479	GASKET, CARBURETOR	1
25	300486	CARBURETOR	1
26	300481	O-RING, CARBURETOR	1
27	3004109	PRIMER BULB	1
28	300329*	INTAKE BASE ASSEMBLY (includes intake base, long choke lever, choke cover & throttle lever screw)	1
29	300340*	CHOKE LEVER, LONG	1
30	300328*	CHOKE COVER	1
31	3004132*	SCREW, THROTTLE LEVER	1
32	300455	PLATE, INTAKE COVER ADAPTER	1
33	300457	COVER, AIR FILTER	1
34	300435	AIR FILTER	1
35	300330	INTAKE COVER	1

*For reference only. Contact customer service for replacement

KEY	PART #	DESCRIPTION	QTY.
36	56105	BRACKET, GAS TANK	1
37	300331	GAS TANK	1
38	300401	GAS CAP, MANUAL VENTING	1
39	300332	SHROUD, GAS TANK	1
40	1021	ROCKER SWITCH	1
--	1021CE	ON/OFF SWITCH WIRE ASSEMBLY REMOTE HANDLEBAR (NOT SHOWN)	
41	300494	GROMMET, 2-HOLE GAS TANK	1
42	300497	HOSE, PRIMER LINE	1
43	300498	HOSE, FUEL LINE	1
44	300335	BOLT W/WASHER PHILLIPS HH	4
45	300492	NUT, FLANGE M6	2
46	300471	BOLT W/WASHER M5 X 12MM	5
47	300439	BOLT W/WASHER PH M5 X 18MM	7
48	300336	BOLT HH M5 X 18MM	4
49	300438	BOLT W/WASHER M5 X 25MM	2
50	300456	BOLT M5 X 50MM	2
51	300326	GUARD	1
52	300338	KEY, FLYWHEEL	1
53	3004103	FILTER, FUEL	1
61	3004158	COVER, AIR FILTER	1
62	30041501*	BASE, AIR FILTER	1
63	3004156	FOAM, AIR FILTER	1
64	3004157	PLATE, REINFORCEMENT	1
65	3004153*	BOLT, CHOKE LEVER	1
66	3004155*	WASHER, CHOKE LEVER	2
67	3004154*	NUT, NYLOC, CHOKE LEVER	1
68	3004151*	CHOKE LEVER	1
69	3004152*	CHOKE PADDLE	1
*	3004150	AIR FILTER BASE (sold as assembly unit only)	1
-	300410	KIT, TUNE-UP (includes spark plug, carb air filter, fuel filter, bottle of Viper 2-cycle oil & spark plug wrench)	1
-	300470	FUEL LINE HOSE & FILTER	1
-	3004114	KIT, CARBURETOR REPAIR	1
-	3004118	KIT, GAS TANK (includes gas tank, both fuel lines, fuel filter & 2-hole grommet)	1
MC43E ELECTRIC START MODEL ONLY			
54	300525	STUD BOLT M6 X 41MM	1
55	300339	KEY, ELECTRIC STARTER	1
56	300527	STARTER WIRE	1
57	300529	STARTER MOTOR KIT (includes starter, stud bolt, clutch drum & ground wire)	1
58	300445	WASHER M5	2
59	300438	BOLT W/WASHER M5 X 25MM	2
60	300439	BOLT W/WASHER PH M5 X 18MM	2

* P/N 3004150 Air Filter Base sold as an assembly unit only.

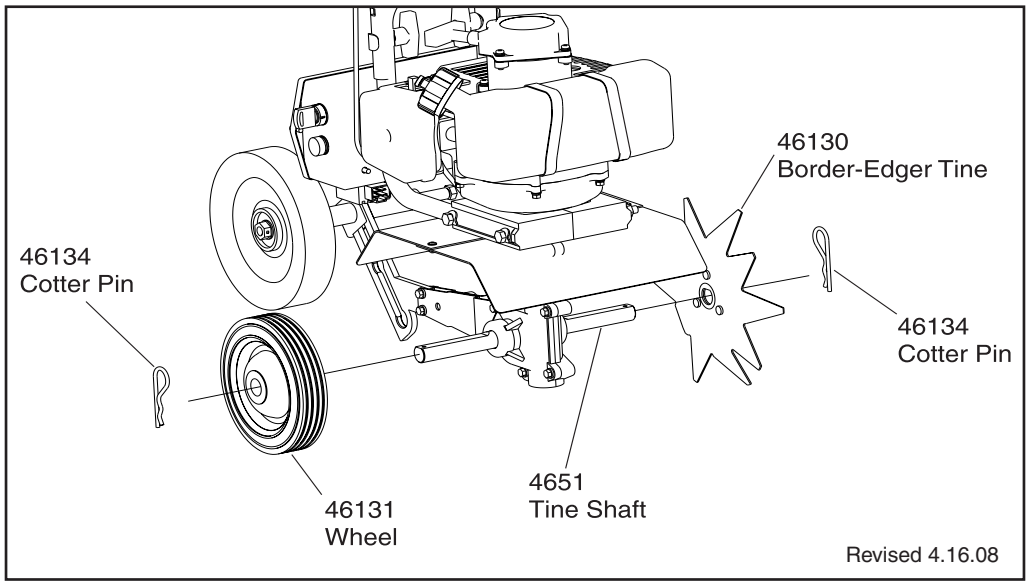
EK43 BORDER-EDGER KIT INSTALLATION (OPTIONAL ACCESSORY)

The Border-Edger Kit is a useful tool for making clean cuts in the lawn along the borders of gardens, flower beds, walkways, and driveways for a well manicured look. To install the Border-Edger Kit, do the following:

1. Disconnect spark plug wire from spark plug.
2. Remove the cotter pins from both sides of the tine shaft.
3. Remove the cultivating tines from the shaft, remembering which direction they are facing.
4. Put the tines in a safe place and save the (2) cotter pins, they will be used on the Border-Edger Kit.
5. Slide the Border-Edger attachment on either side of the tine shaft. Make sure that the hub collar of the border edger tine faces outward, away from the transmission of the mini cultivator.
6. Put (1) cotter pin, flat side facing edger attachment, through the shaft hole that is further down the shaft from the hole where the cultivating tines were placed.
7. Slide the wheel on the opposite tine shaft.
8. Insert the remaining cotter pin, flat side facing wheel, through the hole next to the wheel at the end of the tine shaft.
9. Re-connect spark plug wire.
10. Before using the Border-Edger Kit, remove the drag stake from the unit.
11. Set the mini cultivator wheels to their highest (top) position.

⚠ CAUTION

BE AWARE THAT THE MINI CULTIVATOR COULD UNEXPECTEDLY BOUNCE UPWARD, OR JUMP FORWARD IF THE TINES STRIKE CONCRETE, PAVEMENT, OR OTHER HARD SURFACES OR HARD OBSTACLES BURIED UNDER GROUND.



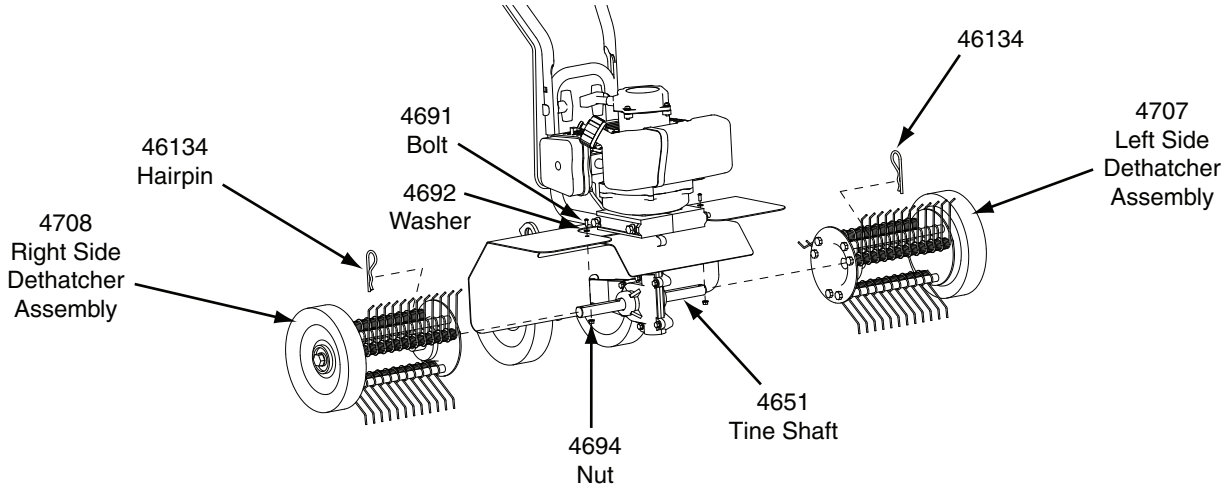
EK43 Border-Edger Attachment Kit
(fits both Models MC43 & MC43E)

DK43 DETHATCHER KIT INSTALLATION (OPTIONAL ACCESSORY)

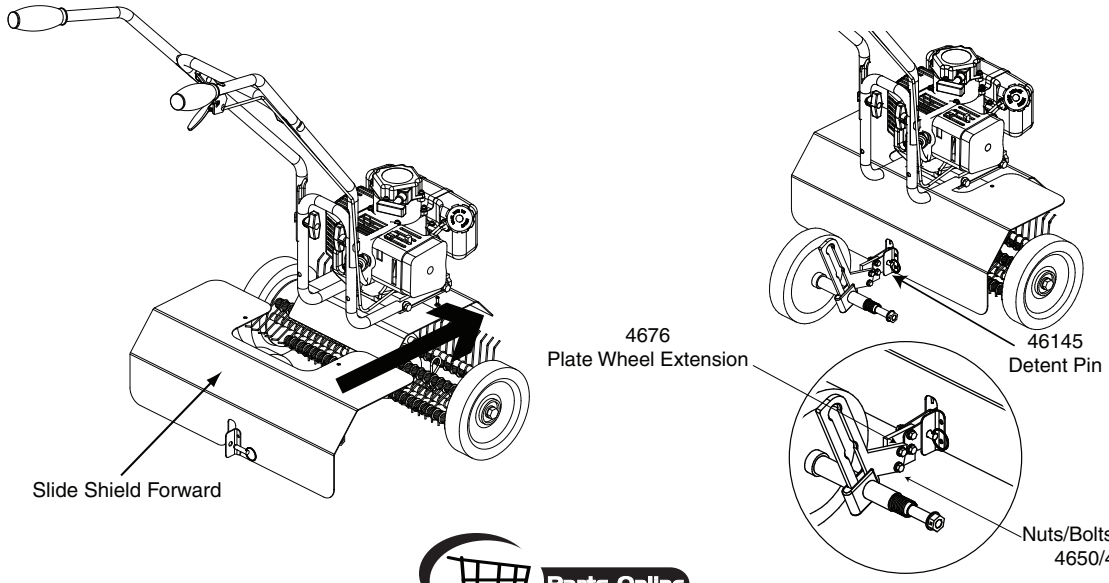
The Dethatcher Kit is very effective for lifting away the excessive matted layers of thatch that can prevent moisture, oxygen and nutrients from penetrating the soil and can harbor disease and insects. Use in Spring, Summer, and Fall to bring life and color back to your lawn.

1. Disconnect spark plug wire from spark plug. Remove the cultivating tines (if so equipped). Refer to exploded view below for detailed assembly.
2. Slide the Left and Right Dethatcher Assemblies onto the tine shaft making sure the Right Assembly is installed on the right side and Left Assembly is installed on the left side as defined from the user's position.
3. Secure dethatcher assemblies using the hairpins 46134.
4. Slide dethatcher shield over the unit's tine shield from the rear of the unit and secure using bolts 4694, washers 4692, and nuts 4694.
5. Secure the lower part of the dethatcher shield to the drag stake mount using the detent pin 46145. Re-connect spark plug wire.
6. Install wheel extension plate 4676 using additional bolts 46142 and nuts 4650

NOTE: The drag stake should not be used when using the dethatcher kit.



DK43 Dethatcher Kit
(fits both Models MC43 & MC43E or stand-alone as MD43)



MC43E & MC43 MINI CULTIVATOR
MD43 DETHATCHER

Warranty Terms and Conditions

PRODUCT WARRANTY: 1-YEAR LIMITED WARRANTY

Ardisam, Inc., a manufacturing company, warrants this **EARTHQUAKE® MINI CULTIVATOR OR MINI DETHATCHER** to be free from defects in the material or workmanship for a period of one year from the date of purchase. During the one year warranty of this product, Ardisam will furnish 100% parts and labor to correct any defect caused by faulty material or workmanship. Any unit used in a commercial application is covered for a period of 90 days after purchase. This warranty applies to the original owner with a proof of purchase and is not transferable. This guarantee is void unless the warranty card is properly filled out and received by Ardisam, Inc., within 30 days of purchase or go to www.GetEarthquake.com for online registration.

For replacement parts, phone 800-345-6007 or go online to www.GetEarthquake.com.

ENGINE WARRANTY: 2-YEAR LIMITED WARRANTY

Ardisam, Inc., a manufacturing company warrants its Viper Engines under a two-year limited warranty to be free from defects in materials and workmanship for the service life of the product not to exceed twenty four consecutive months from the date of purchase for consumer applications. As an Ardisam Viper small engine owner, you are responsible for executing proper maintenance listed in your Operating and Maintenance Instructions. The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated above.

*These warranties apply only to products which have not been subjected to negligent use, misuse, alteration, accident, unauthorized parts, failure to use proper fuel and oil, or if repairs have been performed at non-authorized service centers. These warranties supersede all other warranties either expressed or implied and all other obligations or liabilities on our part. Ardisam, does not assume, and does not authorize any other person to assume for us, any liability in connection with the sale of our products. To be at "No Charge," warranty work must be sent directly to Ardisam, Inc. or one of our authorized service centers and performed by them. To obtain warranty service and/or replacement instructions, contact our customer service department at 800-345-6007 Monday through Friday from 8 a.m. to 5 p.m. or visit www.ardisam.com. If you choose to ship your product to Ardisam for warranty repair, you must first have prior approval from Ardisam by calling our customer service department at 800-345-6007 for a return material authorization number (RMA#). Under these circumstances, all items must be shipped prepaid. Ardisam will at no charge, repair or replace, at their discretion, any defective part which falls under the conditions stated above. Ardisam retains the right to change models, specifications and price without notice.

EARTHQUAKE
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Explanation of Emissions Control Warranty Provisions

Viper Engines are designed, built and equipped to meet all EPA requirements. It warrants that it is free from defects in material and workmanship that could cause failure to the warranted part; and that it is identical in all material respects to the engine described in the manufacturer's application for certification. When a warrantable condition exists, Viper will repair your engine at no cost to you, including parts and labor. The engine emissions label will indicate certification information. If the purchaser is in need of a warrantable repair and is not within 100 miles distance from an Ardisam authorized repair center, Ardisam will pay for shipping costs to and from an authorized Ardisam repair center.

Listed below are the parts covered by the emissions control systems warranty. Some parts listed below may require scheduled maintenance and are warranted up to the first scheduled replacement point for that part. Coverage under this warranty includes only the parts listed below (the emission and evaporation control systems) if so equipped:

- Air Filter Assembly (only to the first scheduled replacement point)
- Fuel Filter (only to the first scheduled replacement point)
- Carburetor
- Fuel Lines, Fuel Line Fittings and Clamps
- Fuel Metering Valve (if equipped)
- Evaporative System (if equipped)
  - Canister (if equipped)
  - Canister filter (if equipped)
  - Vapor hose (if equipped)
  - Orifice connector (if equipped)
  - Fuel tank
  - Fuel cap
  - Primer bulb canister (if equipped)
- Spark Plugs
- Magneto Ignition System
- Muffler Assembly

LIMITATIONS

The Emission Control Systems Warranty shall not cover any of the following:

a) Repair or replacement required because of misuse or neglect, improper maintenance, repairs improperly performed or replacements not conforming to Ardisam, Inc. specifications that adversely affect performance and/or durability and alterations or modifications not recommended or approved in writing by Ardisam, Inc.

b) Replacement of parts and other services and adjustments necessary for required maintenance at or after the first scheduled replacement point;

c) Consequential damages such as loss of time, inconvenience, loss of use of the engine or equipment, etc.

d) Diagnosis and inspection fees that do not result in eligible warranty service being performed; and

e) Any add-on or modified part, or malfunction of authorized parts due to the use of add-on or modified parts.

These items will be covered for a period of **two years** from the date of the original purchase. Viper warrants that: the components are designed, built and equipped so as to conform with all applicable regulations adopted by the EPA; that they are free from defects in material and workmanship that could cause failure to the engine or other; and that the components used are identical in all material respects to the engine described in the manufacturer's application for certification. The warranty period begins on the date the engine is originally purchased.

MAINTENANCE AND REPAIR REQUIREMENTS

The owner is responsible for the proper use and maintenance of the engine. Ardisam, Inc. recommends that all receipts and records covering the performance of regular maintenance be retained in case questions arise. If the engine is resold during the warranty period, the maintenance records should be transferred to each subsequent owner. Ardisam, Inc. reserves the right to deny warranty coverage if the engine has not been properly maintained; however, Ardisam, Inc. may not deny warranty repairs solely because of the lack of repair maintenance or failure to keep maintenance records.

Normal maintenance replacement or repair of emission control devices and systems may be performed by any repair establishment or individuals; however, warranty repairs must be performed by an Ardisam authorized service center. Any replacement parts or service that is equivalent in performance and durability may be used in non-warranty maintenance or repairs, and shall not reduce the warranty obligations of the engine manufacturer.

The warranty on emissions-related parts is as follows:

- Any warranted part that is not scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the warranty period stated above. If any such part fails during the period of warranty coverage, that part will be repaired or replaced at no charge to the owner. Any such part repaired or replaced under the warranty will be warranted for the remaining warranty period.
- Any warranted part that is scheduled only for regular inspection in the owner's manual supplied, is warranted for the warranty period. Any such part repaired or replaced under warranty will be warranted for the remaining warranty period.
- Any warranted part that is scheduled for replacement as required maintenance in the owner's manual supplied, is warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part will be repaired or replaced at no charge to the owner. Any such part repaired or replaced under warranty will be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
- Add on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any nonexempted add on or modified parts by the owner will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a nonexempted add on or modified part.

ARDISAM Inc.

1360 1st Avenue, P.O. Box 666, Cumberland, Wisconsin, 54829 USA
Phone:- 001 (715) 822 2415 Fax:- 001 (715) 822 4180

EC Declaration of Conformity (Noise)

Manufacturers Name:	ARDISAM Inc.
Manufacturers Address:	1360 1st Avenue P.O. Box 666 Cumberland Wisconsin 54829 USA Phone: - 001 (715) 822 2415 Fax: - 001 (715) 822 4180
Declares that this product:	
Description of equipment:	Mini Cultivator/Motor Hoe
Conforms to the following directive:	Outdoor Noise Directive 2000/14/EC Annex V
Measured Sound Power level	92 db_{Lwa}
Guaranteed Sound Power level	93 db_{Lwa}
Cutting width	N/A
Contact Name / Address	Kirk Hyatt / as above
Notified Body:	N/A
Place of Declaration:	Wisconsin
Date:	12/29/2009

ARDISAM Inc.

1360 1st Avenue, P.O. Box 666, Cumberland, Wisconsin, 54829 USA
Phone: - 001 (715) 822 2415 Fax: - 001 (715) 822 4180

Declaration of Conformity

Ardisam Inc. hereby certify that the machinery stipulated below complies with all the relevant provisions of the:

Machinery Directive 98/37/EC
Noise Directive2000/14/EC annex V
Electromagnetic Compatability2004/108/EC

As amended, and the National Laws and Regulations adopting these directives.

Machine description	**:**	**Mini Cultivator / Motor Hoe**
Make	**:**	**Ardisam**
Type	**:**	**MC43CE/MC43RCE**
Serial No.	**:**	**10000 – 99999**

And Is in conformity with the provisions of the following other EEC Directives:

The Electromagnetic Compatibility Directive 89/336/EC (as implemented by the Electromagnetic (Amendment) Regulations 1994 – (SI 1994/3060)

Applicable standard: BS EN 13684:2004

Authorised Person empowered to sign: - Mr. Kirk Hyatt
Position in Company: - **Product Development Manager**

Date: - 12/29/2009

NOTES

NOTES

Visit **www.ardisam.com** and discover more innovations that will benefit you throughout the year.

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Parts Online
GetEarthquake.com